WHAT IS CLAIMED IS:

1. A method of protecting an MR imaging magnet including a plurality of coil groups, said method comprising:

connecting at least one first diode between terminals of a first coil group;

connecting at least one second diode between terminals of a second coil group, wherein the second group is connected to the first coil group via a separation line; and

connecting at least one quench heater between the separation line and the first and second diodes.

2. A method in accordance with Claim 1 wherein said connecting at least one first diode between terminals of a first coil group comprises connecting at least one first diode between terminals of a first coil group, wherein the first coil group comprises at least a portion of a main coil and at least a portion of a shielding coil.

3. A method in accordance with Claim 1 wherein said connecting at least one quench heater between the separation line and the first and second diode comprises connecting at least one quench heater between the separation line and the first and second diodes.

4. A method in accordance with Claim 3 further comprising connecting at least one dump resistor in series with at least one of the first and second diode.

5. A method in accordance with Claim 1 further comprising connecting at least one dump resistor in series with at least one of the first and second diode.

6. A method in accordance with Claim 5 further comprising connecting at least one shunt resistor in parallel with the quench heater.

7. A method in accordance with Claim 5 further comprising connecting at least one protecting diode in parallel with the quench heater.

8. A method in accordance with Claim 1 further comprising connecting at least one shunt resistor in parallel with the quench heater.

9. A method in accordance with Claim 1 further comprising connecting at least one protecting diode in parallel with the quench heater.

10. A method in accordance with Claim 1, wherein said connecting at least one first diode between terminals of a first coil group comprises connecting at least two first diodes between terminals of the first coil group such that one first diode is positioned with a polarity opposite a polarity of another first diode, wherein said connecting at least one second diode between terminals of a second coil group comprises connecting at least two second diodes between terminals of the second coil group such that one second diode is positioned with a polarity opposite a polarity of another second diode.

11. A method for adjusting energy input to a quench heater, said method comprising:

connecting at least one diode in series or parallel with the quench heater and in parallel with at least one coil; and

connecting at least one shunt resistor in series with the diode to adjust energy input to the quench heater.

12. A method for adjusting a current flowing through a coil quench heater, said method comprising:

connecting at least one quench heater to a coil separation line separating at least one coil group from another coil group such that the quench heater is in parallel to at least one coil group; and

connecting at least one shunt resistor or protecting diode in parallel to the quench heater to adjust the current flowing through the coil quench heater.

13. A quench protection circuit comprising:

a first coil group;

a second coil group;

a coil separation line connecting said first group to said second group;

a first quench heater connected to said coil separation line; and

a first diode in series with said first quench heater such that said first diode and said first quench heater are parallel at least one of said first coil group and said second coil group.

14. A circuit in accordance with Claim 13 further comprising a second diode positioned in series with said first quench heater such that said second diode and said quench heater are parallel at least one of said first coil group and said second coil group, wherein said second diode is parallel with respect to said first diode and positioned with a polarity opposite a polarity of said first diode.

15. A circuit in accordance with Claim 14 further comprising:

a second quench heater connected to said coil separation line, and

a third diode in series with said second quench heater such that said third diode and said second quench heater are parallel said second coil group, wherein said first diode and said first quench heater are parallel said first coil group.

16. A circuit in accordance with Claim 15 further comprising at least one shunt resistor connected to said coil separation line in parallel to said first quench heater and said second quench heater.

17. A circuit in accordance with Claim 16 wherein the first coil group comprises at least a portion of a main coil and at least a portion of a shielding coil.

18. A circuit in accordance with Claim 13 wherein the first coil group comprises at least a portion of a main coil and at least a portion of a shielding coil.

19. A circuit in accordance with Claim 18 further comprising:

a second quench heater connected to said coil separation line, and

a second diode in series with said second quench heater such that said second diode and said second quench heater are parallel said second coil group, wherein said first diode and said first quench heater are parallel said first coil group.

20. A circuit in accordance with Claim 13 further comprising:

a second quench heater connected to said coil separation line, and

a second diode in series with said second quench heater such that said second diode and said second quench heater are parallel said second coil group, wherein said first diode and said first quench heater are parallel said first coil group.

21. A circuit in accordance with Claim 20 further comprising a third diode positioned in parallel with said second quench heater such that said third diode and said second quench heater are parallel said second coil group, wherein said second diode is parallel said first diode and positioned with a polarity opposite a polarity of said first diode.

22. A circuit in accordance with Claim 13 further comprising at least one of:

a shunt resistor positioned in series with the first diode to adjust energy input to the first quench heater, and

a shunt resistor positioned in parallel to the first quench heater to adjust the current flowing through the quench heater.

23. A magnetic resonance imaging (MRI) system comprising:

a radio frequency (RF) coil assembly for imaging a subject volume;

a computer coupled to said RF coil, said computer configured to generate images of a scanned object; and

a magnetic resonance imaging magnet having a quench protection circuit, said quench protection system comprising:

a first coil group;

a second coil group;

a coil separation line connecting said first group to said second group;

a first quench heater connected to said coil separation line; and

a first diode in series with said first quench heater such that said first diode and said first quench heater are parallel at least one of said first coil group and said second coil group.

24. A method of protecting an MR imaging magnet including a plurality of coil groups, said method comprising providing a quench protection circuit configured such that the coil groups have a substantial zero eddy current time constant.

25. A method of protecting an MR imaging magnet including a plurality of coil groups, said method comprising providing a quench protection circuit configured such that the coil groups have substantially no unbalanced quench forces during quench events.

26. A method of protecting an MR imaging magnet including a plurality of coil groups, said method comprising providing a quench protection circuit configured such that the coil groups have substantially small fringe field blooming during quench events.